

APPLICANT(S): ID DAN, Gavriel J.
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REMARKS

The present response is intended to be fully responsive to all points of objection and/or rejection raised by the Examiner and is believed to place the application in condition for allowance. Favorable reconsideration and allowance of the application is respectfully requested.

Applicants assert that the present invention is new, non-obvious and useful. Prompt consideration and allowance of the claims is respectfully requested.

Status of Claims

Claims 1-32 are pending in the application.

Claims 1-32 have been rejected.

Claims 1, 4, 7, 8, 12, 19 and 29 have been amended in this submission.

Claim 3 has been canceled without prejudice or disclaimer. In making this cancellation without prejudice, Applicants reserve all rights in these claims to file divisional and/or continuation patent applications.

New claim 33 has been added.

CLAIM REJECTIONS

35 U.S.C. § 112 Rejections

In the Office Action, the Examiner rejected claims 16 and 19 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 16 recites "wherein said second optical system is to direct light reflected from a circular field of view." Applicants traverse the rejection. The word "light" in the claim does not require antecedent basis in claim 13 because it is first introduced in claim 16.

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Claim 19 has been amended to correct the Examiner's rejection.

35 U.S.C. § 102 Rejections

In the Office Action, the Examiner rejected claims 1, 2, 3, 6, 8, 9, 11 and 29-32 under 35 U.S.C. § 102(e), as being anticipated by Mullick et al. (US Patent No. 7,039,453).

Mullick discloses:

A miniature ingestible imaging capsule having a membrane defining an internal cavity and being provided with a window is provided. A lens is disposed in relation to said window and a light source disposed in relation to the lens for providing illumination to outside of the membrane through the window. An imaging array is disposed in relation to the lens, wherein images from the lens impinge on the imaging array. A transmitter is disposed in relation to the imaging array for transmitting a signal from the imaging array to an associated transmitter outside of the membrane. The lens, light source imaging array, and transmitter are enclosed within the internal cavity of the capsule. (Abstract)

In particular, the Examiner points to col. 8 lines 53-56, which recites that the "power source or battery 54 may also be designed to act as the ballast to orient the capsule in the stomach. In other words, the battery will be situated to the posterior of the capsule." However, as shown in Figs. 2 and 3B, battery 54 is centrally located in the longitudinal axis. Therefore, the ballast of Mullick retains the center of gravity along the longitudinal axis, and operates to tilt the capsule vertically.

In contrast to the Mullick reference, amended claim 1 recites a "ballast located off the longitudinal axis, wherein said device has a center of gravity displaced from the longitudinal axis." Mullick therefore does not disclose all elements of amended claim 1, and in particular, the ballast of Mullick is located on the longitudinal axis, because the imager is intended to take images on the longitudinal axis. Thus, Mullick does not disclose a "ballast located off the longitudinal axis" and the device of Mullick does not have "a center of gravity displaced from the longitudinal axis," as recited in amended claim 1.

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Claim 1 is shown to be allowable over the art of record, and the Examiner is respectfully requested to withdraw the rejection. In addition, claims 6, 8, 9 and 11, which depend directly or indirectly from claim 1, are likewise allowable.

Pending claims 29-32 stand rejected under Mullick. Claim 29 as amended recites a method of in vivo imaging comprising:

orienting an autonomous in-vivo imaging device with a ballast; and
capturing an image of an in-vivo area perpendicular to a longitudinal axis of the device.

As shown above, Mullick does not disclose "capturing an image of an in-vivo area perpendicular to a longitudinal axis of the device." Accordingly, claims 29, and by extension claims 30-32, which depend therefrom, are allowable over the art of record.

35 U.S.C. § 103 Rejections

In the Office Action, the Examiner rejected claim 4 under 35 U.S.C. § 103(a), as being unpatentable over Mullick et al. (US Patent No. 7,039,453) in view of Alfano et al. (US Patent No. 6,240,312).

First, Applicants point out that Mullick and Alfano do not disclose the elements of claim 1, discussed above, from which claim 4 depends.

Next, Alfano does not disclose the elements of claim 4, insofar as the figures pointed out by the Examiner clearly depict optical systems located on the front side of the capsule, and not "located on a transverse side of said in-vivo device displaced from said longitudinal axis of symmetry," as recited in claim 4.

In addition, Applicants further point out new claim 33, which depends on claim 4, which recites that "said optical system is directed to capture an image of an in vivo area perpendicular to said longitudinal axis of symmetry." This is neither disclosed by either Mullick or Alfano.

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Nor would the configuration of claims 1 or 4, as amended, have been obvious to one of ordinary skill in the art. There is no evidence or suggestion in Mullick or Alfano of "located on a transverse side of said in-vivo device displaced from said longitudinal axis of symmetry." See *Ex Parte Katoh et al*, Appeal 20071460, decided May 29, 2007. Further, the Examiner has not provided any evidence that it was conventional in the art of autonomous in vivo devices to position the optical system on a transverse side of said in-vivo device displaced from said longitudinal axis of symmetry. See *Ex Parte Owlett*, Appeal 20070644, decided June 20, 2007.

Therefore, there is no suggestion to combine the teachings and suggestions of Mullick and Alfano, as advanced by the Examiner, except from using Appellants' invention as a template through a hindsight reconstruction of Appellants' claims. *Ex Parte Crawford et al*, Appeal 20062429, decided May 30, 2007.

In the Office Action, the Examiner rejected claims 5 and 10 under 35 U.S.C. § 103(a), as being unpatentable over Mullick et al. (US Patent No. 7,039,453) in view of Mizumoto (US Patent No. 4,278,077).

Claims 5 and 10 depend from claims 1 and/or 4, which are allowable over the art of record, as discussed above.

In addition, claim 10 recites that the "ballast is to change an orientation of said device in response to a magnetic field." The Examiner has cited Mizumoto to show activation by induction of current by the magnetic field. For example, Mizumoto describes that the magnetic field may act on the magnet of the camera and move it toward the electromagnet, etc. (col. 2 lines 43-55).

However, nowhere do Mizumoto or Mullick disclose, or render obvious, "a ballast located off the longitudinal axis, wherein said device has a center of gravity displaced from the longitudinal axis" or that the ballast in particular is to "change an orientation of said device in response to a magnetic field."

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In the Office Action, the Examiner rejected claim 7 under 35 U.S.C. § 103(a), as being unpatentable over Mullick et al. (US Patent No. 7,039,453) in view of Miyazaki (US Patent No. 6,184,923).

First, claim 7 is allowable by virtue of being dependent from claims 1 and 4, which are allowable for the reasons stated above. In addition, Applicants point out that the Miyazaki pertains to a conventional endoscope and not an autonomous in vivo device, as recited in the claims. As such, there is no need for a ballast in the endoscope of Miyazaki, and it would not have been obvious to combine the teachings of the Miyazaki reference and Mullick and/or Alfano.

In the Office Action, the Examiner rejected claims 12-28 under 35 U.S.C. § 103(a), as being unpatentable over Mullick et al. (US Patent No. 7,039,453) in view of Lemelson (US Patent No. 5,993,378) and further in view of Miyazaki (US Patent No. 6,184,923).

The Examiner has pointed to Lemelson '378 as disclosing an in vivo device with multiple optical capturing window and sensor arrays, as shown in Figs. 11 and 12 (described at col. 11 lines 6-22). As the Examiner indicated, these are all aimed in the same direction. The arrangements of Figs. 13 and 15 (described at col. 11 line 56 – col. 12 line 23) as best understood are not directed to image sensors, but temperature, pressure or other non-image sensors. The Examiner, however, has stated that Lemelson teaches that the device's "sensor head arrangement was modify from the optical imaging head." No cite to Lemelson is provided, and this sentence is not understood.

In fact, because the device of Lemelson is not autonomous, there would have been no need for imagers aimed at multiple locations, because in order to see another in vivo area, the user would simply move the imager to another location. Accordingly, there is no disclosure in Lemelson (nor any suggestion) of:

a device "comprising a first optical system facing parallel to an axial direction and a second optical system facing perpendicular to said axial direction," as recited in claim 12;

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a device comprising "a first imager and first optical system to image in a direction parallel to an axial portion of said in vivo imaging device; and a second imager and second optical system to image in a direction parallel to a transverse portion of said imaging device," as recited in claim 13; or

a method comprising "capturing a first image of a first in-vivo area with an autonomous imaging device, said first area in front of an axial plane of said device; and capturing a second image of a second in-vivo area with said imaging device, said second area transverse to said axial plane of said device," as recited in claim 25.

Nor would it would not have been obvious to one of ordinary skill exercising common sense to modify Lemelson as suggested by the Examiner.

Therefore, and for the other reasons stated above, claims 12, 13, and 25 (and their dependent claims) would not have been obvious over the art of record, and are therefore allowable.

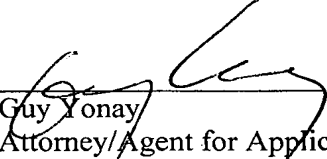
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In view of the foregoing amendments and remarks, the pending claims are deemed to be allowable. Their favorable reconsideration and allowance is respectfully requested.

Should the Examiner have any question or comment as to the form, content or entry of this Amendment, the Examiner is requested to contact the undersigned at the telephone number below. Similarly, if there are any further issues yet to be resolved to advance the prosecution of this application to issue, the Examiner is requested to telephone the undersigned counsel.

Please charge any fees associated with this paper to deposit account No. 50-3355.

Respectfully submitted,


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